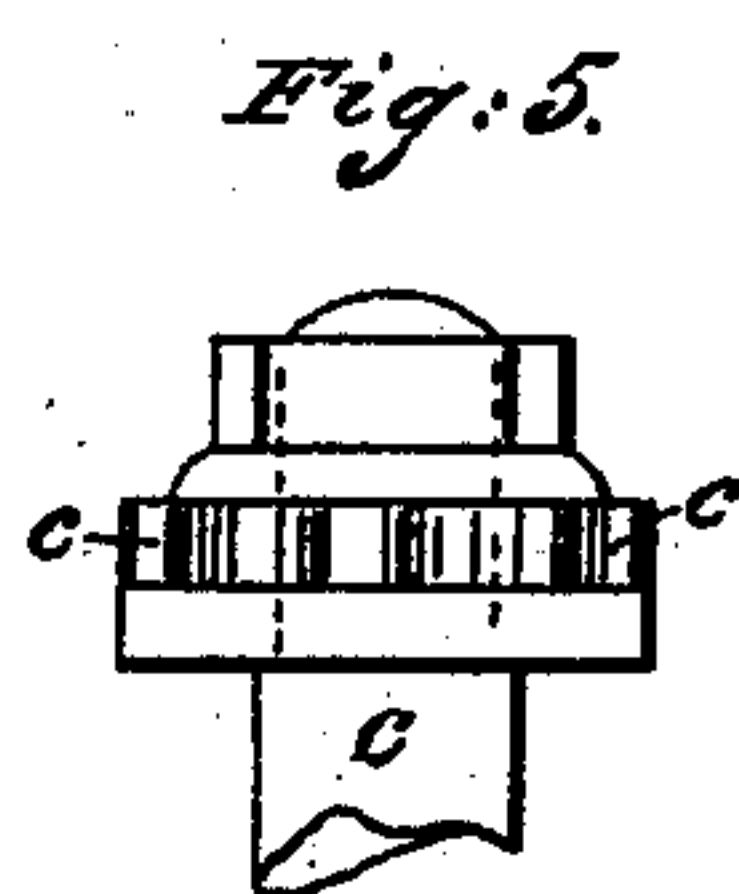
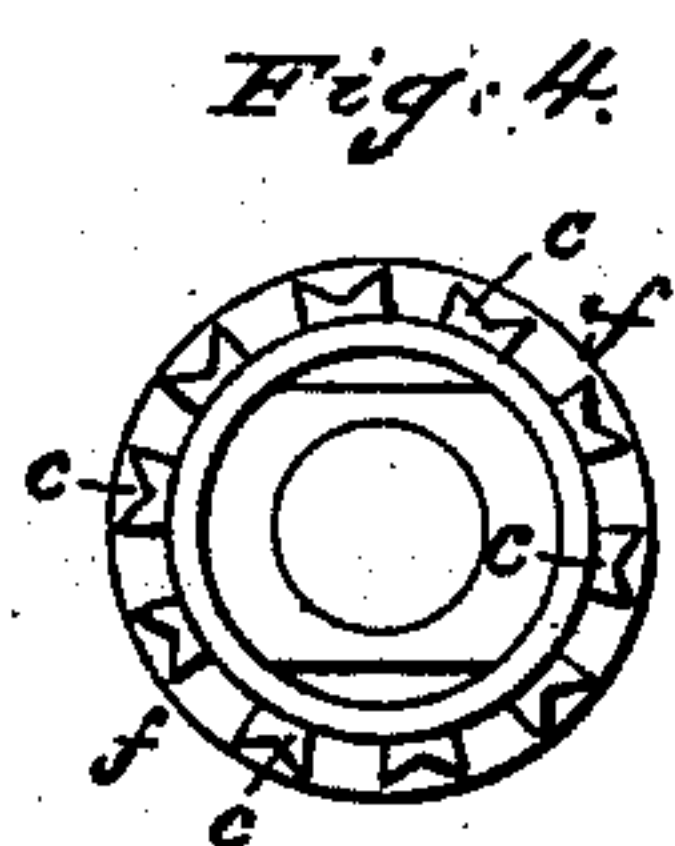
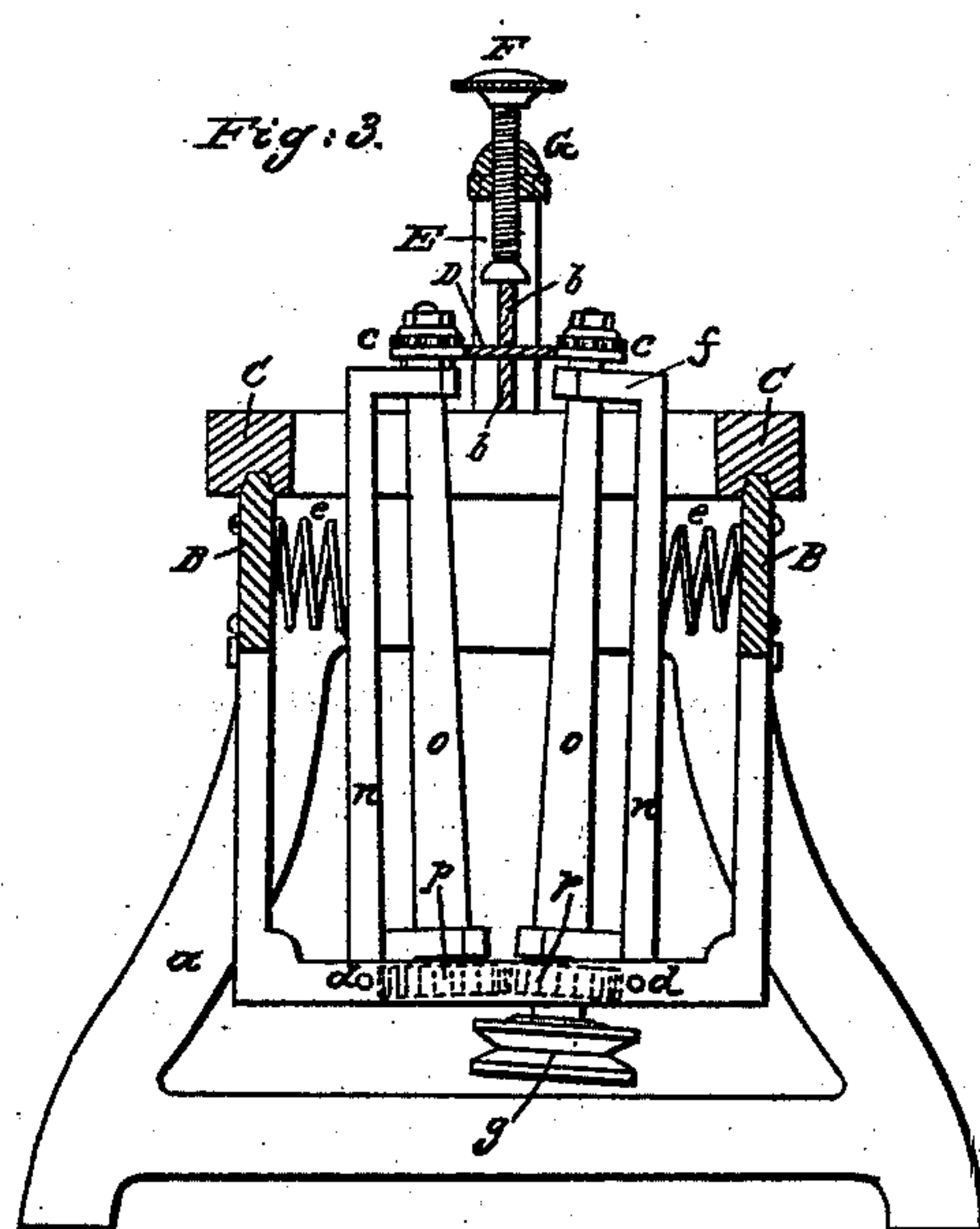
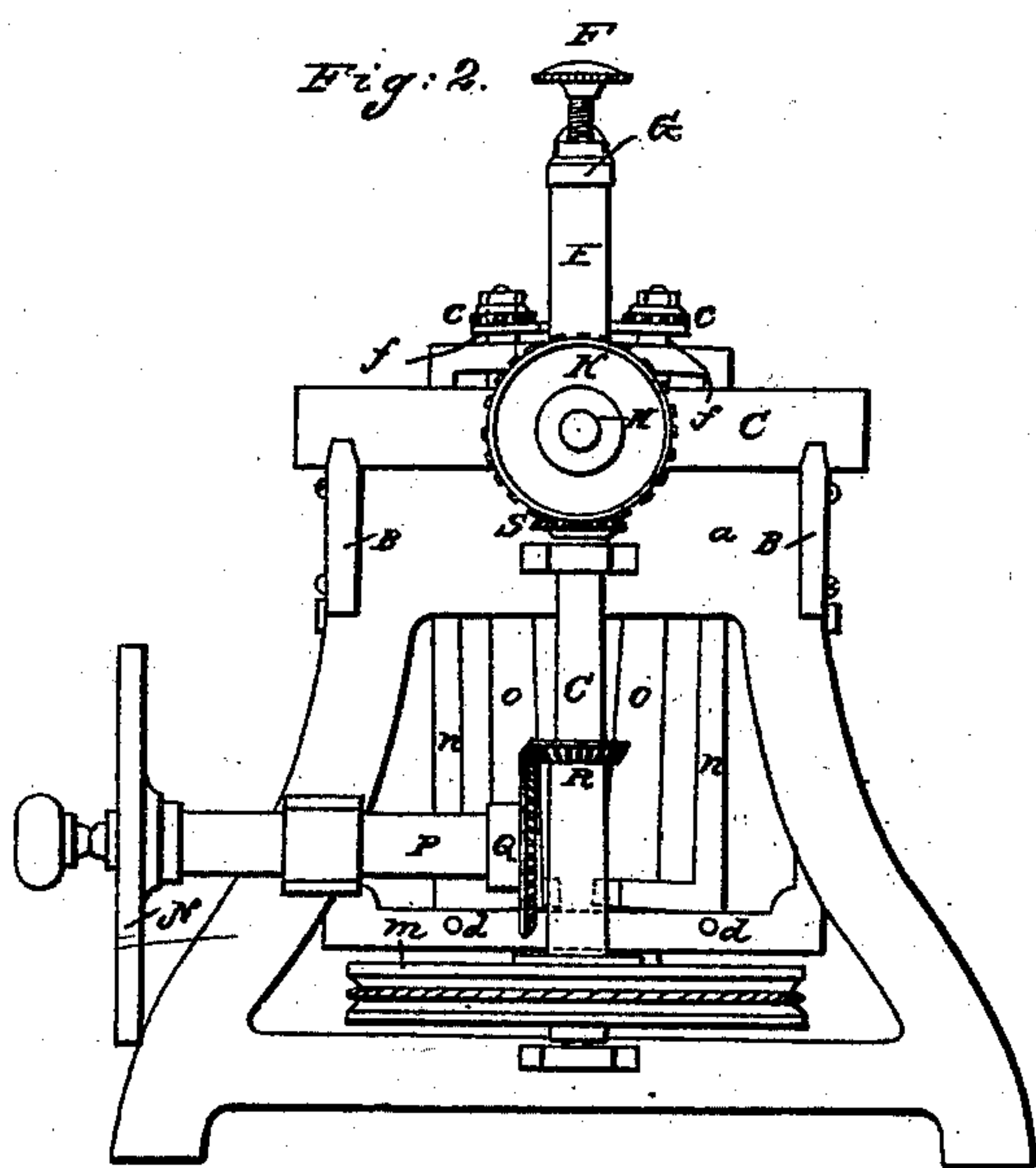
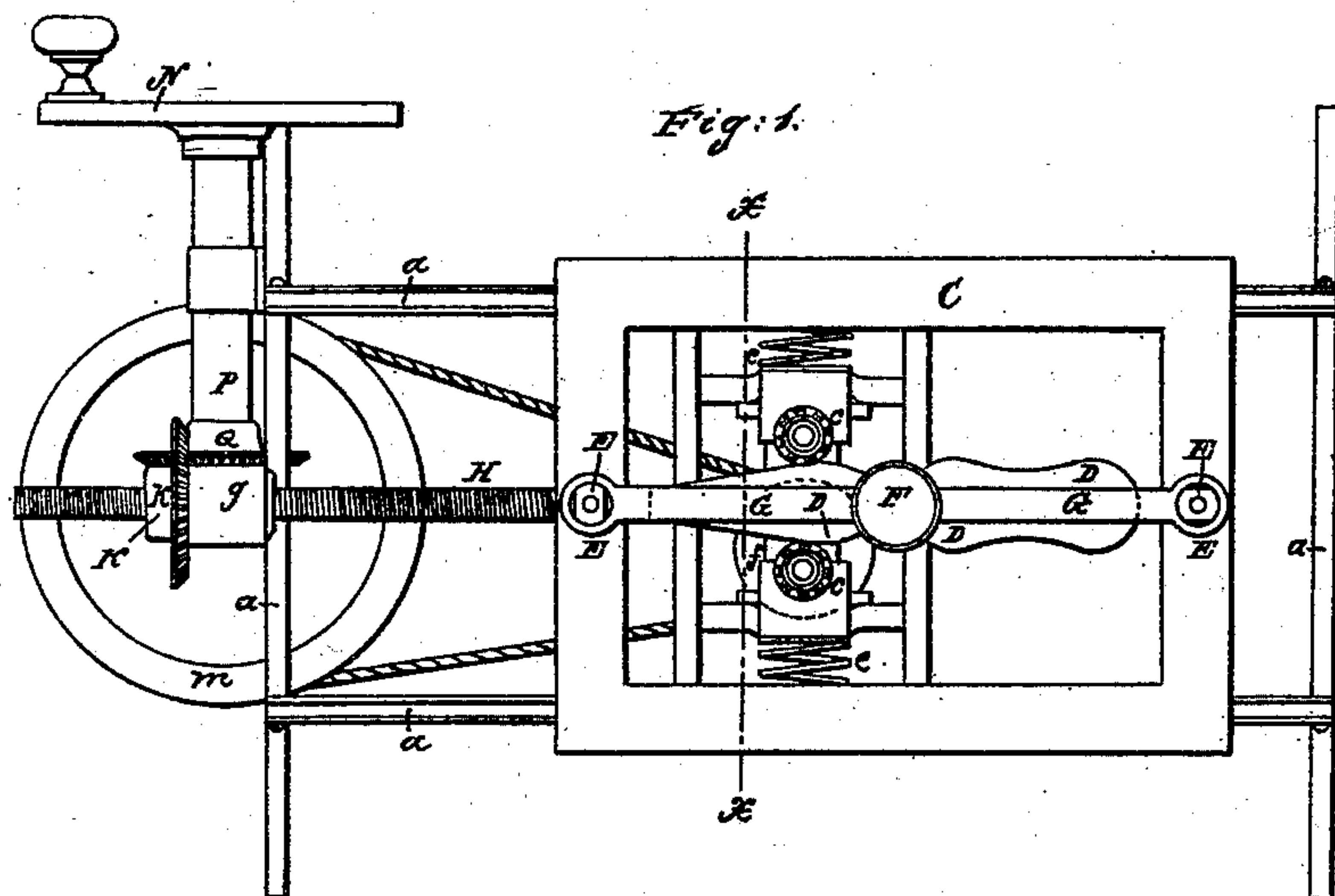


S. H. GILMAN.
 Manufacture of Forks.

No. 4,235.

Patented Oct. 16, 1845.



UNITED STATES PATENT OFFICE.

SAML. H. GILMAN, OF BOSTON, MASSACHUSETTS.

MANUFACTURE OF FORKS.

Specification of Letters Patent No. 4,235, dated October 16, 1845.

To all whom it may concern:

Be it known that I, SAMUEL H. GILMAN, of the city of Boston, in the State of Massachusetts, have invented certain new and useful machinery for the purpose of filing, cutting, or dressing the edges of forks made from silver or other metal and which may be used also for dressing the handles of spoons, as well as of other articles of a like character; and I do hereby declare that the following is a full and exact description thereof.

My apparatus for the manufacturing of forks consists of two machines which are to be consecutively used, one of them for filing or dressing the edges of the handle part and the other for filing or dressing the prongs, the machinery in both cases rendering them perfectly true and uniform in size and performing the labor with a rapidity hitherto unknown.

In the accompanying drawings Figure 1, is a plan or top view of the machine for dressing the edges of the handles; Fig. 1^b, is a side elevation thereof; Fig. 2 is an end elevation of the same, and Fig. 3, a transverse vertical section through it in the line *x, x*, of Fig. 1. Fig. 4, is a top view on an enlarged scale, of one of the rotary files, or cutters, with its teeth so formed as to cut the work when revolving either way. Fig. 5 is a side view of it as confined to its shaft by a nut.

D, D, Fig. 1, represents a pattern, or guide, which consists of a metallic plate of the size and form intended to be given to the outline of the handle when finished; this plate is embraced between two bars *b, b*, Fig. 1^b, and Fig. 3, the ends of which are received in grooves on the inner sides of the posts E E, that rise from the sliding frame *c, c*, the thumb screw F, which passes through the bar *g, g*, confining the whole in place. I put dowel pins through the pattern, which entering one of the bars, secures the pattern from being displaced. The sliding frame, or carriage *c, c*, is sustained, and runs, upon the upper edges *a, a*, of the side pieces, or checks, B, B, of the frame which enter guide grooves on the under side of said carriage.

The circular files, or cutters *e, e*, of which there are two, are each attached by a screw nut to the upper end of a revolving shaft *o, o*; these shafts run in rollers in the rock-

ing frames *n, n*, that vibrate on pivots *d, d*, on the lower part of the frame. The shafts *o, o*, are geared together at their lower ends by small toothed wheels or pinions, shown at *p, p*, in the section Fig. 3; at their upper ends they are made to approach toward each other by the action of spiral or other springs *e, e*, which press against the frames *n, n*, and thereby keep the circular files in contact with the edges of the handles. Immediately below the circular files, and in contact with them, there are placed circular plates, or disks of steel *f, f*, which are of the same diameter with the files; these bear against the pattern D, D, and thus determine the form to be given to the edges of the handle.

N, is a winch, or wheel, which may be turned by hand, or otherwise; and from which the required motion may be communicated to the whole machine. P, is a shaft to which the winch N is attached, and this at its opposite end carries the bevel wheel Q that gears into a bevel wheel R, on the vertical shaft *c'*; on the upper end of this shaft there is a bevel wheel S, that gears into a bevel wheel K, attached to a revolving screw nut on the leading screw H; this screw is attached to one end of the sliding frame C. The revolving screw nut runs in a collar T, attached to the frame *a*, of the machine, and serves to move the sliding frame back and forth. In the lower end of the shaft *c'*, there is a pulley *m*, and at the lower end of one of the shafts *o*, a pulley *g*; a cam embracing these pulleys gives motion to the revolving files.

In using this machine, the piece of metal to be dressed on its edges, is secured in place, and on turning the winch N, in the proper direction, the files or cutters, will be made to revolve, and the sliding carriage to move in a direction the reverse of that of the files. When these have reached the end of the pattern, the handle will be dressed, and is to be replaced by a new one; the winch is then to be turned in a reverse direction, and so on alternately.

Figs. 6, 7, 8, 9 and 10 represent the machine, and the respective parts thereof, for cutting or dressing the prongs. Fig. 6 is a top view of the machine complete; Fig. 9, a side elevation of it; Fig. 10, an end view; Fig. 7, a cross section showing the rest as it stands against one of the revolving wheels.

Fig. 8, is an enlarged view of the shaft, the wheels, and cutters.

The machine as shown in Figs. 6, 8, and 9 is for finishing the edges of a four pronged fork; A, A, is its frame, and B, a shaft running in suitable bearings in side frame, this may be made to revolve by the whirl P, and on it are placed the cutter wheels *c, c, c*, which may be made of soft steel. These wheels are notched out so as to receive the cutters H, which I make with a V groove on their edges, that fit on to corresponding projections on the edges of the notches in the wheels. The respective cutters should be distributed around the wheels so as to break joints, that they may operate in succession. They are, of course, a little thicker than the wheels, as their cutting edges must project out to a short distance from the face of the wheel; as shown on those marked C, D, E, Fig. 8. R, R, R are rests that are to sustain the prongs while being cut; these pass in between the wheels *c, c* extending up to the center of the shaft, or nearly so. The fork, after the prongs have been roughly formed by punching or sawing out of the metal between them, are to be laid upon the rests and advanced against the cutters, the machine moving rapidly, say at the rate of a thousand revolutions in a minute; by this means

the prongs will be instantaneously rendered perfectly true and even on their edges.

Having thus fully described the nature and operation of my improved machinery for manufacturing forks and other articles of a like character, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The manner in which I have combined and arranged the respective parts of the machinery for cutting filing, or dressing, the handles, as herein described; that is to say, I claim the manner of arranging and combining the revolving cutters, or files, the pattern by which the form to be given to the handle is governed, the rocking frames which carry the cutters, and the sliding frame, being made to coöperate in their action substantially as set forth.

2. In that for dressing the prongs I claim the combination of the revolving wheels, with their cutters, and with the rests which pass in between said wheels, for the purpose and substantially in the manner herein made known.

SAMUEL H. GILMAN.

Witnesses:

THOS. P. JONES,
EDWIN L. BRUNDAGE.